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Students' Self-Efficacy Belief as a Predictor of Academic Performance

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Abstract: This study examines the role of students' self-efficacy belief and how it affects and predicts their academic performances. The objectives of the study are to examine the relationship between students' self-efficacy belief and academic performance. Similarly, the study aims to explore the predictability power of students' self-efficacy belief in predicting students' academic performance. A total of 364 undergraduate students from University Sultan ZainalAbidin (UniSZA) Terengganu Malaysia, participated in the study. A questionnaire was used in soliciting information from the sample respondents. Academic performance was measured using academic GPA collected from all the participants. Obtained data was analyzed using correlation and regression analysis. Findings of the study revealed that UniSZA undergraduate students are self-efficacious in their learning, the study also revealed that a strong positive correlation exist between students' self-efficacy belief and academic performance while students' self-efficacy belief serves as a good predictor of students' academic performance.

Key words: Self-efficacy, academic performance, undergraduate students, Malaysia, belief

INTRODUCTION

Educators have long recognized that learners' beliefs about their academic capabilities play a crucial role in their motivation to achieve but self-conceptions regarding academic performance initially proved difficult to measure in a scientifically valid way. Initial efforts to study students' self-beliefs gave little consideration to environmental influences such as specific features of performance contexts or domains of academic functioning (Zimmerman, 2000a). As a performance-based measure of perceived capability, self-efficacy varies theoretically and psychometrically from associated motivational constructs such as outcome expectations, self-concept or locus of control. Self-efficacy refers to personal conclusions of one's capabilities to consolidate and execute courses of action to attain designated goals (Bandura, 1997). Bandura (1982) asserted that self-percepts of efficacy influence thought patterns, actions and emotional arousal.

In causal tests, the higher the level of induced self-efficacy, the higher, the level of performance accomplishment and the lower the level of emotion arousal. A high sense of efficacy improves human achievement and personal well-being in severalways. People with a high belief in their capabilities approach demanding tasks as challenges to be mastered rather than as threats to be shunned. Such an efficacious attitude fosters intrinsic interest and deep engrossment in activities. They set themselves challenging goals and maintain a strong commitment to them. They intensify and sustain their determinations in the event of failure. They rapidly recuperate their sense of efficacy after failures or impediments. They characterized the failure to unsatisfactory research or inadequate knowledge and skills that are acquirable. They approach frightening circumstances with the belief that they can exercise control over them. Such an efficacious viewpoint produces personal accomplishments, reduces stress and lowers vulnerability to depression (Bandura, 1994).

In contrast, Bandura (1994) maintained that individuals who doubt their capabilities are reluctantin performing difficult tasks that they view as personal threats. They have little aspirations and feeble commitment to the goals they select to accomplish. When confronted with challenging tasks, they reside on their individual deficiencies, on the impediments they will encounter and all kinds of adverse results rather than focus on how to perform efficiently. They relax their efforts and give up hurriedly in the face of difficulties. They are slow to recuperate their sense of efficacy following failure or obstacles. Because they view unsatisfactory performance as deficient aptitude, it does

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not necessitate many failures for them to lose belief in their capabilities. They equally fall easy victim to stress and depression. The above factors highlighted the need to train students to be self-efficacious in their learning. Therefore, this study aims to examine the role of self-efficacy belief as a predictor of students' academic achievement.

Objectives of the study: The primary objective of the study is to examine the role of students' self-efficacy belief as a predictor of University Sultan Zainal Abidin (UniSZA) undergraduate students' academic performance. The specific objectives include the following:

- To find out the relationship between students' self-efficacy belief and academic performance of UniSZA undergraduate students
- To examine the effect of students' self-efficacy beliefs on the academic performance of UniSZA undergraduate students

Research questions:

- Is there any relationship between students' self-efficacy belief and the academic performance of UniSZA undergraduate students?
- To what extent do students' self-efficacy belief affects the academic performance of UniSZA undergraduate students?

Research hypothesis:

- There is no any significant relationship between students' self-efficacy belief and the academic performance of UniSZA undergraduate students
- Students' self-efficacy belief has no any significant effect on the academic performance of UniSZA undergraduate students

Overview of self-efficacy belief: According to Schunk (1991), academic self-efficacy refers to people's beliefs that they can successfully perform given academic tasks at designated levels. Self-efficacy refers to personal conclusions of one's capabilities to consolidate and execute courses of action to attain chosen goals (Bandura, 1997). It is a belief about what one can do rather than personal judgments about one's physical or personal attributes. It is also content specific and varies across several dimensions such as level, generality and strength. The levels of self-efficacy refers to dependence on the difficulty level of a particular task, generality of self-efficacy denotes to the transferability of one's efficacy judgments across different tasks or activities while the strength of self-efficacy judgments pertain to the certainty to whom can perform a given task (Zimmerman, 1995). This indicates that the self-efficacy is not a personality or physical attributes. It is only measured on the level of task that can be only performed, the ability to use a similar strategy to solve a different task and lastly the rate of precision in accomplishing a given task.

Bandura (2006) maintained that beliefs in one's ability is an essential personal resource in self-development, successful adoption and change. He stressed that efficacy belief operates through its impact on cognitive, motivational, affective and decisional processes. Efficacy beliefs affect whether person think optimistically or pessimistically in self-enhancing or self-debilitating ways. To him such beliefs influence people's goals and aspirations how they motivate themselves and their perseverance in the face of difficulties and diversity. He argued that efficacy beliefs tend to shape people's outcome expectations whether they expect their efforts to produce favorable outcomes or adverse ones, it also determine how environmental opportunities and impediments are viewed. He pointed out that people of low self-efficacy beliefs are easily persuaded of the futility of effort in the face of difficulties. They quickly give up trying while those of high self-efficacy beliefs view impediments as surmountable by self-development and perseverant effort. Unlike, the low self-efficacious people, high self-efficacy people stay the course in the face of difficulties and remain resilient to diversity. From the above, it is clear that students who have a firm belief in themselves will likely become successful in their academic pursuits and will be having the ability to adapt to changes. This is because people of high self-efficacy face their life challenges with some degree of courage and perseverance and do not give up until they achieve their desired outcomes.

Zimmerman and Cleary (2006) believed that the construct of self-efficacy has a variety of distinctive features. They maintain that the characteristics are essential because they provide a point of comparison with other constructs and have consequences for how self-efficacy perceptions should be measured. They stated that the self-efficacy addressed the issue of "how well can i do something?" rather than "what am i like?" Secondly, self-efficacy percepts are distinctive because they are not only domain specific but are also context and task specific. In terms of content specificity, a student may express a lower sense of efficacy to learn mathematics in competitive classroom structure than in a cooperative one. A third feature of self-efficacy is its dependence on a mastery standard of performance rather

than on normative criteria. Finally, self-efficacy beliefs are generally assessed prior to engaging in a particular task or activity. They maintained that this antecedent property provides a temporal ordering needed for assessing the role of efficacy percepts in causal structures. As a result, self-efficacy has been theorized as a fore-thought process within self-regulation models because of its proactive impact on performance and self-evaluation processes following performance (Zimmerman, 2000b). From the above, it is clear that students' self-efficacy belief is a prime condition necessary to attain self-regulation. This is because self-efficacy beliefs enable an individual to have trust and confidence in his or her ability to handle different task be it academic or personal. This ability permit individual become active and independent personality in solving his or her day-to-day academic tasks and challenges that can be best describe as self-regulation.

Literature review: Nie *et al*. (2011) examine whether academic self-efficacy could moderate the maladaptive relation between task importance and test anxiety. Findings of their study showed that high levels of academic self-efficacy were related to low levels of test anxiety. This shows that students' self-efficacy beliefs tend to reduce the rate of test anxiety among students. In a related study, Odaci (2011) investigated whether academic self-efficacy and academic procrastination can act as predictors of problematic internet use among university students. Findings of her indicated that there was a significant negative correlation between academic self-efficacy and problematic internet use. However, the study revealed that academic self-efficacy was determined to be a substantial predictor of problematic internet use. In a similar study, Turgut (2013) investigated academic self-efficacy beliefs of students with respect to gender, academic performance and grade level. A total of 244 undergraduate students (195 females and 49 males) enrolled in the department of mathematics education (57 freshmen, 106 sophomores and 81 junior) at a government university located west side of Turkey. Finding of the study indicated that students' academic self-efficacy beliefs were over moderate level. The study also revealed that there was a significant effect of grade level on ASES scores. Junior level undergraduate students' academic self-efficacy level was greater than those students at the higher level.

However, the study revealed there was not a significant effect of gender on ASES scores of undergraduate mathematics education students. He concluded that three-way interaction of gender, grade level and academic performance did not influence undergraduate mathematics education students' academic self-efficacy beliefs. Similarly, Bouffard *et al*. (2005) examined how self-efficacy beliefs affect self-regulated strategies and its relationship with performance on a cognitive task. Total 140 students (85 girls and 55 boys) were placed into two experimental conditions; one where the students were induced to promote high self-efficacy beliefs and the other one to develop low self-efficacy beliefs. Findings suggested that the students from the high efficacy condition reported greater confidence and more expectations than learners in the low efficacy condition. Students from the high efficacy condition performed better than students from the low efficacy group when trying to achieve learning goals.

Based on student reports, it was suggested that the high-performance group focused more on managing the extent of energy and time they dedicated to each problem (Bouffard *et al*., 2005). In assessing university students' self-efficacy belief in learning, Yusuf (2011) conducted a study to investigate the relationship between self-efficacy, achievement motivation and self-regulated learning strategies of undergraduate students. The objective of the study was to examine the current relationship between self-efficacy, achievement motivation and self-regulated learning strategies of undergraduate students. A total of 300 undergraduate students from Universiti Kebangsaam Malaysia (UKM) participated in the study. The researcher makes the use of a structured questionnaire to solicit information on the study variables: self-efficacy, achievement motivation and self-regulated learning strategies. The obtained data were analyzed using a confirmatory factor analysis. The findings of the study indicated that the covariance between the indicators of achievement motivation and that of learning strategies had the highest values. Followed by the covariance between the achievement motivation and the learning strategies and lastly the covariance between self-efficacy beliefs and the achievement motivation indicators. The results indicated that, there was a significant correlation between self-efficacy beliefs, achievement motivation and self-regulated learning strategies confirming the argument of the literature review.

MATERIALS AND METHODS

Participants: In the present study, a total of 364 volunteering undergraduate students of University Sultan Zainal Abidin (UniSZA) Terengganu, Malaysia were involved in the study. The participant consist of 202 female and 162 male with age ranging from 15-25 years randomly selected with the three campuses of the university.

Instrument: A researcher made questionnaire was administered to the target population. The questionnaire was written in two languages, English and Malay for easy understanding across adiverse category of respondents. The questionnaire consists of two sections, demographic seven items and self-efficacy section 15 items measuring students' self-efficacy beliefs about learning. It was based on a seven-pointrating scale ranging from 1 strongly disagree to 7 strongly agree. The questionnaire was validated by experts in educational psychology. The Cronbach's alpha reliability value of the questionnaire was 0.947. The value 0.947 shows that the questionnaire serve as a reliable instrument for measuring students' self-efficacy belief in learning.

Procedure: In order to recruit the participants for the study, the researcher obtained a verification letter from the faculty of Islamic contemporary studies, University Sultan Zainal Abidin. The letter was usually presented upon request by the respondents. The field work was conducted with the help of a research assistant. The questionnaires were distributed in lecture theaters and hostels. The researcher/assistant briefly address the respondents about the purpose of the study and why their cooperation is needed as well as guaranteeing the confidentiality of all information given. Similarly, the researcher will inform the respondents that what they are to offer will not in any way be part of their academic records.

RESULTS

Data analysis: Obtained data was analysis using linear regression. Students' academic Grade Average Point (GPA) was used as a measure of students' academic performance. Therefore, students' self-efficacy belief is the independent variable while academic GPA is the dependent variable for the study. Coded responses from the questionnaires together with the obtained academic GPA were computed using Statistical Package for Social Sciences (SPSS).

Table 1 gives a description of gender categories. A total of 364 students participated in the study. Out of this figure, 162 are male representing 44.5% of the study sample size. On the other hand, 202 respondents were female representing 55.5% of the study sample size.

Table 2 gives a descriptive statistic of the study variables. From Table 2, students' self-efficacy belief is having a mean score of 5.5180 with a standard deviation of 0.65174. Students GPA which is the dependent variable of the study have 3.1892 as the mean score with standard deviation 0.51014. The mean scores are the average points obtainable by each member of the sample.

Table 1: Gender

Gender	Frequencies	Percentage
Male	162	45.5
Female	202	55.5
Total	364	100

Table 2: Descriptive statistics

Variables	Mean	SD	N
Students self-efficacy	5.5180	0.65174	364
Students' GPA	3.1892	0.51014	364

Table 3: Correlation between self-efficacy and GPA

Pearson correlation	GPA	P	N
Self-efficacy	0.761**	0.000	364

*, **p<0.05, 0.01

Table 4: Regression coefficient of self-efficacy as a predictor of GPA

Model	R	R^2	Adjusted R^2	Error of estimate
1	0.761	0.580	0.578	0.33123

Predictors: (constant), students self-efficacy

Testing of hypothesis one: In Table 3, represents 0.761 the correlation coefficients between students' self-efficacy belief and their Academic Performance (GPA). The correlation value of 0.761 indicated that a strong positive correlation exist between students' self-efficacy belief and their academic performance. This is because the correlation value 0.761 is fairly close to 1. The closer the value is to 1, the stronger the relationship. Similarly, the two variables are statistically significant at p = 0.000, p<0.05 while the N represent the study sample that is 364. This indicates that the higher the level of students' self-efficacy belief the higher will be their GPA grade and the lower the level of students' self-efficacy belief the lower will be their GPA grade.

Therefore, based on the correlation value of 0.761 which indicates a strong positive correlation between the two variables, the null hypothesis there is no any significant relationship between students' self-efficacy belief and the academic performance of UniSZA students is hereby rejected.This finding reveals that a strong correlation exist between students' self-efficacy belief and their academic achievement.

Testing of hypothesis two: In Table 4 R = 0.76 represent the regression coefficient between the study variables. The R^2 = 0.580, represent the total variability of the dependent variable as explained by the independent variables. The value revealed that students' self-efficacy belief explains 58% of the total variability in students' GPA.

The Analysis of Variance (ANOVA), Table 5 is used in measuring the fitness fit of the model regression. From Table 5, the F-statistic value is 499.036 while the p = 0.000 which indicates that the regression model fit the data at hand because the p<0.05.

Table 5: ANOVA summary of regression analysis for self-efficacy predictor of GPA

Model	Sum of squares	df	Mean square	F	Sig.
Regression	54.751	1	54.751	499.036	0.000
Residual	39.716	362	0.110		
Total	94.468	363			

Table 6: Regression coefficient for self-efficacy as a predictor of GPA

Variable	B	SE	β	t	p
Constant	-0.099	0.148	-0.668	0.505	
Students Self-efficacy	0.596	0.027	0.761	22.339	0.000

Dependent variable: students GPA; *, **0.05, 0.01

The coefficients Table 6 shows the effect of an independent variable on the dependent variable. Analysis of the coefficient Table 6 shows that when the independent variable is constant, we have a negative t-statistic value of t = -0.6537 p = 0.505, this is statistically insignificant because p>0.05. However, students' self-efficacy has a t-statistic value t = 22.339 p = 0.000, showing a statistically significant coefficient because the p = 0.000, p<0.05. This show that the study variables were statistically significant because their p values were <0.05. On the other hand, the unstandardized coefficient measures the extent to which the independent variable can predict the dependent variable. From Table 6 when the independent variable is constant, students' GPA was predicted to decrease by -9.9%. However, students' self-efficacy (independent variable) is predicted to increase academic GPA (dependent variable) by 0.59%. That is for any additional unit of students' self-efficacy belief in learning, their GPA is predicted to increase by 0.59%. Based on the obtained results, the null hypothesis that says students' self-efficacy belief have no any significant effect on the academic performance of UniSZA students is rejected. The findings revealed that students' self-efficacy belief has a positive effect on students' performance. Similarly, the findings also revealed that self-efficacy belief serves as a good predictor of students' academic performance.

DISCUSSION

The aim of this study was to examine students' self-efficacy belief as a predictor of academic performance among UniSZA undergraduate students. The primary objectives of the study are to find out the relationship between students' self-efficacy belief and their academic performance. Secondly, to assess the effect of students' self-efficacy beliefs on their academic performance. In the light of the stated objectives, two null hypothesis were raised to pilot the study. The result related to hypothesis one revealed that a strong relationship exist between students' self-efficacy beliefs and their academic achievement. The computed r = 0.761 at p = 0.000, p<0.05 level of significance. Based on these values, the result revealed a strong positive relationship between students' self-efficacy belief and their academic performance.That is for any increase in students' self-efficacy belief, their Academic Performance (GPA) will increase in the same direction.

The findings are in line with the research of Yusuf (2011) that efficacy beliefs is positively correlated with academic achievement. For this reason, the null hypothesis that says there is no significant relationship between self-efficacy and academic performance among UniSZA undergraduate students was rejected. Similarly, the study revealed that self-efficacy has a positive effect on academic achievement and it serve as a good predictor of students' Academic Performance (GPA). The R^2 on the model summary table shows that 58% of the total variability in students GPA is explained by the independent variable (self-efficacy). Additionally, based on the coefficient result, self-efficacy predicts 0.596% of students' GPA. That is for any additional unit of self-efficacy, students' GPA is predicted to increase by 0.596% holding all other factors constant. This shows that self-efficacy serves a good predictor of students' GPA. These findings are in line with the research of Bouffard *et al*. (2005) students from the high efficacy condition performed better than students from the low efficacy group when trying to achieve learning goals. The finding also corresponds to the research of Odaci (2011) that academic self-efficacy substantial predictor of problematic internet use.

CONCLUSION

Conclusively, based on the results of the study, it can be deduced that UniSZA undergraduate students are self-efficacious in their learning. Additionally, the study revealed that a positive correlation exist between students' self-efficacy belief and their academic achievement. Similarly, the study showed that self-efficacy serves as a good predictor of the academic performance of UniSZA undergraduate students.

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